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ED/EC D-123

September 25, 1957

EXECUTIVE COMMITTEE OF THE
ECONOMIC DEFENSE POLICY COMMITTEE

The memorandum below, and the accompanying paper, will be considered at the Executive Committee meeting of Tuesday, October 1, 1957.

MEMORANDUM

TO: THE CHAIRMAN, EXECUTIVE COMMITTEE

FROM: Defense Member

SUBJECT: Embargo of Copper Wire

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1. In view of the extended negotiations and assuming the results of the current bilaterals between [redacted] and U.S. relative to the embargo of copper wire will prove negative, the Defense Department suggests that the Executive Committee develop and propose a subsequent course of action. It is urged that this matter be expedited due to the pending U.K.-USSR trade agreement negotiations to which the "prior commitment" policy will apply.

2. Defense proposes that the USDEL, as soon after October 1 as possible, introduce in COCOM a proposal to upgrade copper wire to embargo status. To offset possible [redacted] with other exporters of copper wire, it is further proposed that the U.S. engage in bilaterals with such countries. In both instances it is suggested that a unilateral version of the [redacted] agreed paper, subject: "The Nature and Extent of the Dependence of the Sino-Soviet Bloc on Imported Supplies of Copper," be used along with other studies understood to have been developed by State on the net value, e.g. (processing) of exports by countries concerned.

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3. Defense, calling attention to the high strategic value placed on all forms of copper by the U.S., considers it to be urgently important to conclude COCOM negotiations on this commodity so that the experience may be reflected in subsequent courses of action relative to the implementation of the recently approved U.S. economic defense policy. It is anticipated that many facets of interagency controversy may be resolved in this exercise as it is expected that details of vague concepts and criteria interpretation will be revealed.

Distribution:
ED List Part [redacted]

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THE NATURE AND EXTENT OF THE DEPENDENCE OF THE SINO-SOVIET BLOC ON IMPORTED SUPPLIES OF COPPER

SUMMARY AND CONCLUSIONS

The copper requirement of the Bloc for 1956 (exclusive of stockpiling is estimated at 660,000 tons.

In 1956, the Bloc produced about 460,000 tons of copper and imported about 115,000 tons, of which 85,000 tons consisted of bare wire from COCOM countries.
Consumption in 1956 is estimated to have been as follows:-

Military production for current use	120,000 tons
Telecommunications networks, mainly for military use	90,000 "
Civilian industry (electrical equipment, atomic energy etc.)	400,000 "
	610,000 tons

Essential military production and telecommunications demands were probably met in full but, even if some 35,000 tons were withdrawn from the strategic stockpile, civilian industry still went short by some 50,000 tons.

An annual allocation for military stockpiling might be about 135,000 tons.

On this showing there was in 1956 a shortfall of 220,000 tons, consisting of 50,000 tons in the civilian economy, the probable withdrawal of 35,000 tons from the strategic stockpile, and the failure to add 135,000 tons to it.

The civilian and telecommunications requirements will increase, and we have no evidence that the military demand for current use is likely to diminish or that the desire to make up the arrears of stockpiling will weaken. On the other hand production will increase, but indigenous supplies will still fail to match requirements. The copper shortage is likely to become more serious, with repercussions on both military and civil programs.

DISCUSSION

1. Exports of copper from COCOM countries to the Soviet Bloc were placed under quantitative control in August 1950, and under embargo in April 1951. After the revision of the lists in 1954 bare copper wire was transferred to the "Watch List" where it now stands, other primary forms of the metal remaining embargoed.

2. The present paper is produced jointly by U.S. defence and intelligence representatives, who have expressed the view that recent exports of copper wire from COCOM countries to the Bloc have frustrated the embargo over the metal.

3. Copper is widely used throughout all highly industrialized economies, and is a classic example of an item whose uses range from the wholly military to the purely civilian, through sectors of the economy whose normal uses are in the civil field in peacetime, but which contribute both to a country's military effort in wartime and to its peacetime preparations for or against war - especially in times of tension.

4. It is impossible to estimate the military requirement for copper and products containing it without considering what kind of war the Soviet Bloc may have in mind. Soviet interest in nuclear weapons and in arrangements for their delivery is well known and nuclear energy requirements are believed to form an important constituent of the total demand for copper within the Bloc - though in the later sections of this paper the nuclear requirement is included in our estimates of civilian consumption. Nevertheless, the available intelligence suggests that the emergence of the new weapons has not led the Soviet planners to abandon the concept of a war of considerable duration, necessitating the prior accumulation (as raw material or in finished forms) of scarce materials such as copper. Nor has the Bloc abandoned programs of stockpiling scarce materials, including copper - a program which is preponderantly strategic in conception - though some diminution of the copper stockpile has been forced on it.

5. In the talks preceding the issue of this paper, the main emphasis has been on the relation between total supplies of copper available to the Bloc and current military requirements. The following sections of the paper treat:-

(a) Bloc production of copper.

(b) The volume, sources and types of Bloc imports of copper.

(c) The requirements of different sectors of the economy, and the incidence of shortfalls in allocation.

(d) The current rates of allocations of copper in the Bloc to different sectors of the economy, and changes in stocks and reserves.

PRODUCTION

6. The latest information on Soviet copper production has resulted in a downward revision of earlier estimates for each year since 1945. These revised estimates show a steady increase in Bloc production from 136,000 tons in 1945 (as against an earlier estimate of 166,000 tons) to 461,000 tons in 1955 (as against an old estimate of 545,000 tons). The resulting cumulative difference between old and present estimates of the total amount produced in postwar years amounts to 615,000 tons.

7. The following table shows latest estimates of Bloc production in 1950, 1955 and 1956, and of planned production for 1960 (all in thousands of metric tons).

	U.S.S.R.	Satellites and Communist China	Total
1950	247	39	286
1955	377	84	461
1956	377	80	457
1960 Plan	603	112	715

8. Not only has Bloc production throughout the postwar years been consistently lower than was previously estimated; the Soviet Union, which is the only large producer in the Bloc, failed by a substantial margin to achieve its planned production in the Fifth Five-Year Plan (1951-55) and apparently failed to achieve any increase in 1956 over its 1955 production figure of 377,000 tons.

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It fell 90,000 tons short of the planned production for 1955, and in 1956 there was little or no improvement. Achievement of the production planned for 1960 will be exceedingly difficult in view of the Soviet Union's shortage of high-grade copper ore deposits and its recent record of failures.

BLOC IMPORTS

9. The Sino-Soviet Bloc as a whole is a large importer of copper. Exports from the Bloc to countries outside are negligible.

10. Bloc imports of copper have varied between about 90,000 and 140,000 tons annually over the last four years. In 1953 and early 1954 these imports were mainly in primary forms and advantage was taken of technical weaknesses in the operation of the controls, weaknesses which were largely eliminated in January 1955. Since August 1954, imports have been mainly in the form of bare wire from COCOM countries and the total volume has been much the same as before.

11. Total Bloc imports in 1956 are estimated to have been between 110,000 and 120,000 tons, of which 85,000 tons consisted of bare wire from COCOM countries. China did not import any significant quantity of copper directly from non-Bloc countries, but received a considerable quantity via Poland. The total imports shown above are estimated to have been distributed within the Bloc as follows:-

U.S.S.R.	30-40%
European Satellities	40-50%
China	20%

The large proportion of the total absorbed by the satellites is believed to reflect not only their low level of production, but also the extent to which their industries (especially those of Czechoslovakia and Eastern Germany) are used by the Soviet Union to meet Soviet requirements for manufactured goods. In addition to the amounts shown they may have received further quantities from the Soviet Union to help them fulfil Soviet orders. China's imports on the other hand remain in China. Over the years 1950-1956 total imports of 600,000 tons represent an addition of 22 per cent. to total Bloc production of 2,720,000 tons, and there has been relatively little variation in this proportion from one year to another. There are already substantial orders for delivery in 1957.

RESERVE STOCKS

12. In 1945 the Soviet Union had a large stockpile of copper which was accumulated mainly from United States lend-lease shipments during the war. This stockpile has been partially run down from time to time and the net withdrawals are estimated to have totalled some 100,000 tons by January 1956, leaving a residue of about 585,000 tons.

REQUIREMENTS AND CONSUMPTION

13. It has long been recognized that copper is one of the few raw materials which are in chronic short supply in the Soviet Bloc. Because the severity of this shortage is an important element in the present discussion, a realistic assessment of requirements is essential. Since the Soviets never publish requirements data - as distinct from production plans - we have estimated requirements from deductions drawn from pre-war statistics and post-war Western experience, and from what is known of their major copper consuming programs.

Requirements

14. It can be demonstrated that in any major industrialized, steel-producing country, there is in peace a fairly steady ratio between the production of crude ingot steel and the consumption of copper. This ratio varies slightly from country to country in accordance with trade patterns and other factors, but for the United States, [redacted] some other Western European countries, and [redacted] it has been remarkably constant as between the 1930s and post-war years. 25X6A 25X6A

15. Soviet figures for steel production are available for both pre-war and post-war years. Statistics on Soviet copper consumption are available for the 1920s and 1930s but not for the post-war years. In order to estimate the post-war requirement we have assumed that, as in the West, the post-war steel/copper ratio in the Bloc has been that known for the pre-war period.

16. On this basis, the Soviet Bloc's copper requirements for current consumption, including military production, in 1956 would be about 660,000 tons. Bloc requirements estimated by this method would thus have exceeded indigenous production by 200,000 tons or 43 per cent. A similar calculation based on the original published plan for 1960 suggests that the demand will reach 966,000 tons in that year.

Consumption

17. After comparing estimates of Soviet bloc military consumption derived from Soviet and Satellite budgetary allocations and from the Bloc's production of military end-items for current use by the forces in being (including components and spares), it is estimated 120,000 tons of Bloc copper was consumed for these items in 1956.

18. 90,000 tons are estimated to have been used in the wires, cables, receivers, transmitters, etc., of the communications networks. These communications facilities are designed to a strategic plan, and to a large degree are related to the requirement for secure, high-capacity systems capable of meeting air defence demands. Part of the total system is used for civilian communications in peacetime, but much of it is even now used mainly for surveillance and military training. The telecommunications consumption of copper is preponderantly of a military nature. In order to overcome the inadequacies of the present communications system, the Bloc will have to continue expenditures at something like this level over a number of years. Taken together military end-items and telecommunications are therefore estimated to have used 210,000 tons of copper in 1956 or 44 per cent. of indigenous production.

19. Some other industrial uses are closely related to military requirements - notably those arising from the atomic energy program, but further identification of the military supporting programs will not be undertaken in this paper.

20. When demands of military end-items and telecommunications amounting to 210,000 tons (which we believe were met in full) are deducted from the estimated total requirement of 660,000 tons, there remains a requirement of 450,000 tons for the whole of the rest of the industrial economy of the Bloc. Domestic production and imports amounted to 575,000 tons (see paragraphs 7 and 11) from which, after deduction of the 210,000 tons, only 365,000 tons would remain for general industrial use. An estimate of consumption in the main copper-using industries suggests, however, that civilian industry as a whole must have used rather more than this - probably about 400,000 tons, of which considerably more than half went to electrical equipment. Domestic production and imports must therefore have been supplemented by 35,000 tons drawn from the strategic stocks (see paragraph 12).

STOCKPILING

21. In the above calculation, we have made no allowance for building up strategic stocks. On the evidence set out in paragraph 4 the Bloc would have to have reserves on hand before the onset of any major hostilities in order to meet the impact of expanded wartime rates of use. These reserve stocks, whether primary metal or in fabricated forms - e.g. ammunition, weapons, military vehicles, etc. - are just as much a military requirement as the equipment which is now being used. But as indicated above we believe that copper shortages have made stockpiling impracticable, and indeed that the Bloc has had to withdraw copper from reserve, particularly in the past two years.

22. The magnitude of this set-back - measured in tons of copper not placed in reserve - can be assessed only by assuming that the Bloc has a stockpile objective which it would hope to achieve within a reasonable period. If we assume that the objective is to provide for two years' war time consumption, the amount might be 1,250,000 tons. If the Bloc wished to build up to this figure from the present level in five years, the annual installment would have to be about 135,000 tons.